

5.5 Roots of Real Numbers



Simplify

$$\sqrt{36}$$

6 principal root

Solve

$$\sqrt{x^2} = \pm 6$$

$$x = \pm 6$$

$$\sqrt{75}$$

$$\begin{array}{c} 25 \overline{) 75} \\ \underline{50} \\ 25 \end{array}$$

$$5\sqrt{3}$$

$$\sqrt{24}$$

$$\begin{array}{c} 6 \overline{) 24} \\ \underline{12} \\ 12 \end{array}$$

$$2\sqrt{6}$$

$$\sqrt{32}$$

$$\begin{array}{c} 8 \overline{) 32} \\ \underline{16} \\ 16 \end{array}$$

$$4\sqrt{2}$$

$$\sqrt[3]{32}$$

$$\begin{array}{c} 16 \overline{) 32} \\ \underline{16} \\ 16 \end{array}$$

$$\sqrt[3]{27} = 3$$

$$\begin{array}{c} 9 \overline{) 27} \\ \underline{27} \\ 0 \end{array}$$

$$\sqrt{16x^3}$$

$(x \cdot x \cdot x)$

$$4x\sqrt{x}$$

$$-\sqrt{9x^6}$$

$$-3x^3$$

$$\pm\sqrt{(q^3+5)^4}$$

$$\pm(q^3+5)^2$$

$$\sqrt[4]{x^8y^{12}z^4}$$

$$x^2y^3z$$

$$\sqrt[3]{-27p^6}$$

$$-3p^2$$

$$b^{\frac{3}{5}}$$

$$\sqrt[5]{243a^{10}b^3}$$

$$3a^2\sqrt[5]{b^3}$$

$$\sqrt{-4}$$

$$\text{Not } \mathbb{R}$$

$$\sqrt[3]{-8}$$

$$-2$$

$$\sqrt[6]{t^7}$$
$$t\sqrt[6]{t}$$

HW

p248

31, 43, 49, 30-54 x3 (Multiples of 3)